# THE MOST FUNDAMENTAL TOOL OF HUMAN THOUGHT

Alfred

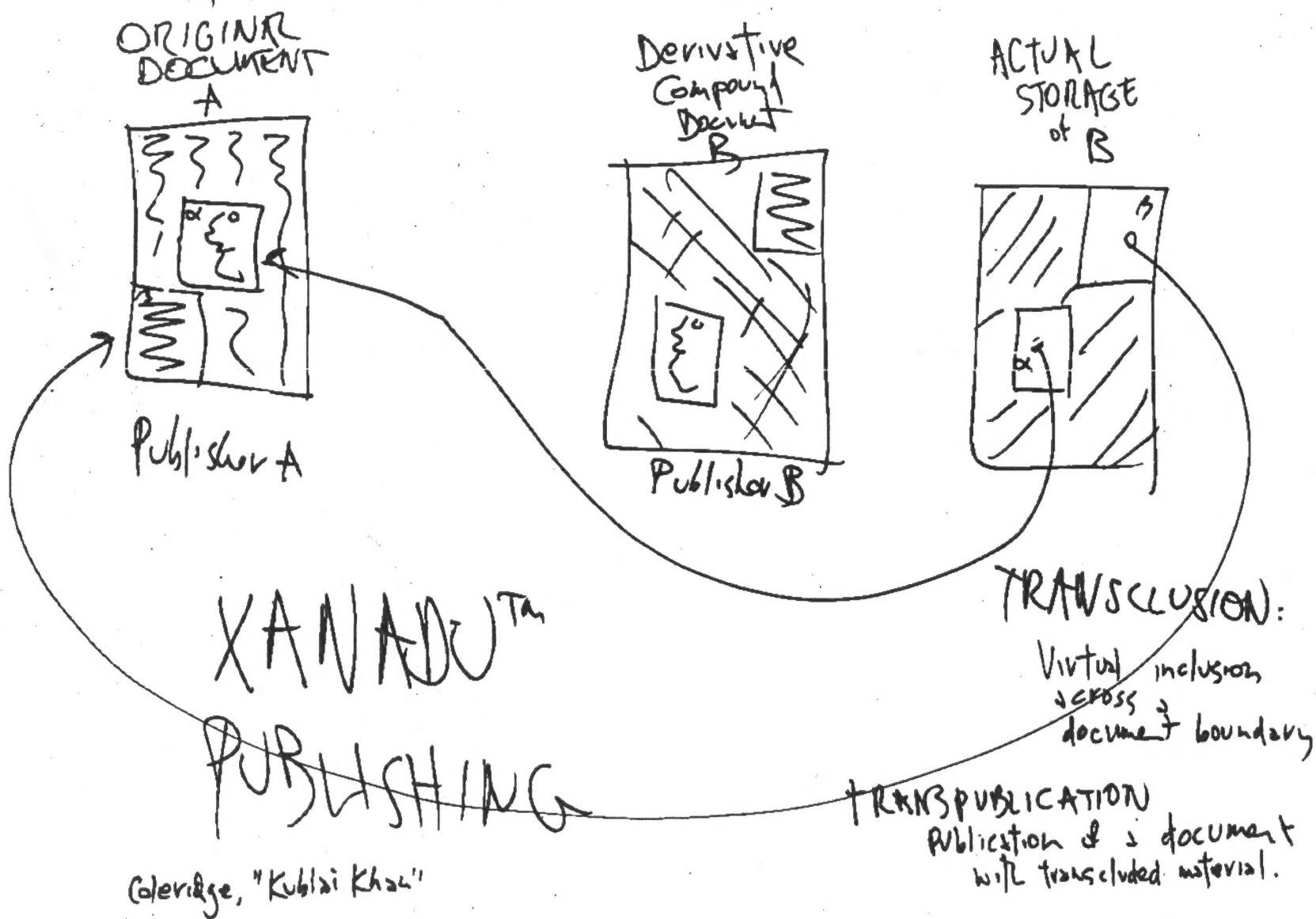## OF HUMAN THOUGHT

### THE DEEP INTERCOMPARISON SYSTEM

Transclusive Multimedia Editing System
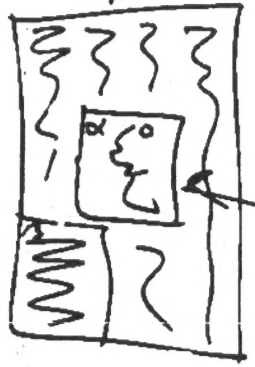
Parallel

## AKIRA KUROSAWA

**HYPERTEXT** non-sequential writing    **HYPERMEDIA** non-sequential presentations
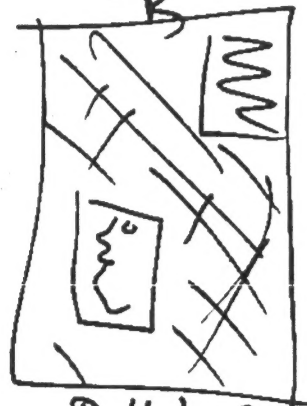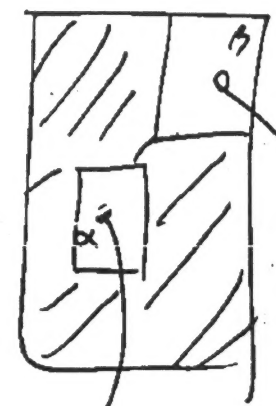
INTERACTIVE PRESENTATION

ORIGINAL DOCUMENT A

Publisher A

Derivative Compound Document B

Publisher B

ACTUAL STORAGE of B

XANADU™

PUBLISHING

Coleridge, "Kublai Khan"

TRANSCLUSION:
Virtual inclusion across a document boundary

TRANSPUBLICATION
Publication of a document with transcluded material.

1. Hypertext & Hypermedia
    as CREATED WORKS

2. A network of feeder computers
    — DISTRIBUTED SERVERS
    for RANDOM BROWSING & DELIVERY
    of PARTIAL DOCUMENTS & OBJECTS
    sending for only THE NEXT PIECE

3. AUTOMATIC ROYALTY PER BYTE
    Every document has a cash register
    User automatically pays royalty to publisher + delivery fees

4. FREEDOM TO QUOTE
    by TRANSCLUSION & TRANSPUBLICATION

5. FRANCHISED NETWORK, like McDonald's.

6. THE MOST FUND. TOOL OF HUMAN THOUGHT: THE DEEP INTERCOMPARISON SYSTEM.

Douglas C. Engelbart.

"The Augmentation
of
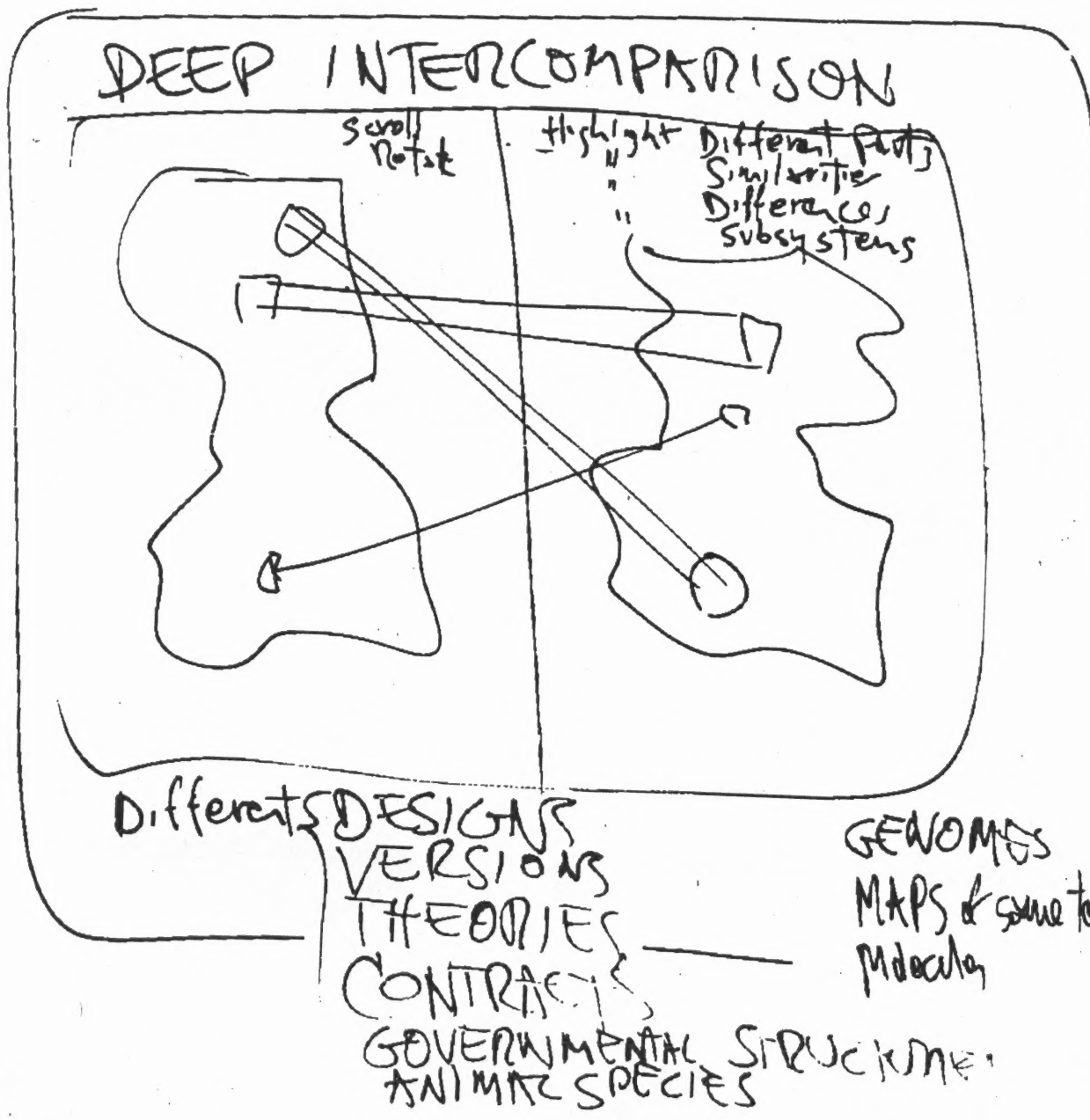Human Intellect."

Word processing
Outline processing
The mouse
Multiple windows on a screen
Electronic mail
Groupware.

Chord keyboard.

1945 — "As We May Think" — Vannevar Bush

DEEP INTERCOMPARISON

scroll
notat

highlight Different Pats
" Similarities
" Differences
Subsystems

Differents DESIGNS
VERSIONS
THEORIES
CONTRACTS
GOVERNMENTAL STRUCTURE.
ANIMAL SPECIES

GENOMES
MAPS of same territory
Molecular

DISCONNECTED FILES
DISCONNECTED WINDOWS
for Deep Interactive Intercomparison

5

# KERNEL MECHANISMS
for interactive browsing & delivery
of
Transclusive hypermedia
## WITH DEEP INTERCOMPARISON

Deductive Logic

Syllogisms & Sorites

Since ~ 1890, Frege & Russell

"or"
"not"
"implication"
}

Sheffer
stroke function

MORE
COMPACT
HARDER
TO UNDERSTAND

# XANADU
## HEAVY

1979+    Roger Gregory, Mark S. Miller
1983+    Xanadu Operating Company
1988-1992   Sponsored by Autodesk

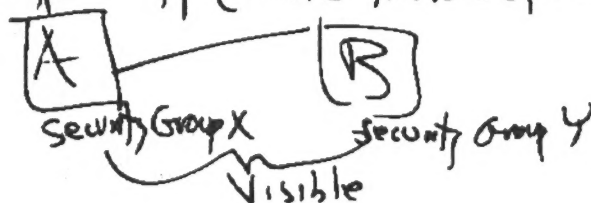1993 sponsored by Memex, Inc.

# SERVER FOR INTERCONNECTED STRUCTURES

Transclusion

Link Types (extensible forever)

Arbitrary Dimensionality

Integer X <u>REAL</u> X · · ·

High-Power Security (visible links between security group)

Joint

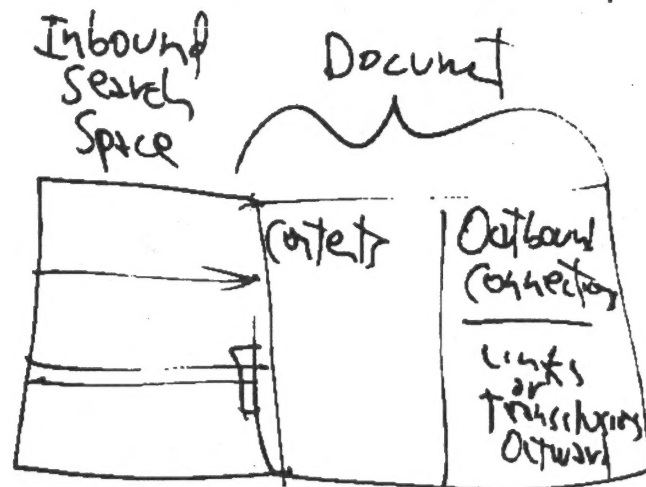(not floating point)



Security Group X    Security Group Y

Visible

1994?

# XANADU
## LIGHT
### (Nelson, 1992)

Relational databases, distributed

Royalty
Transpublication



Inbound
Search
Space

Document

Contents | Outbound
Connections

Links
or
Transclusions
Outward

NOT
OWNED
BY THIS
PUBLISHER

# VIRTUALITY   Opposite of reality.

① CONCEPTUAL STRUCTURE (should be UNIFIED)
CAR = left, right, stop, start
MOVIE: story

② FEEL   [Should be excellently DETAILED]
CAR: color, the smell, cushions, handling, appearance
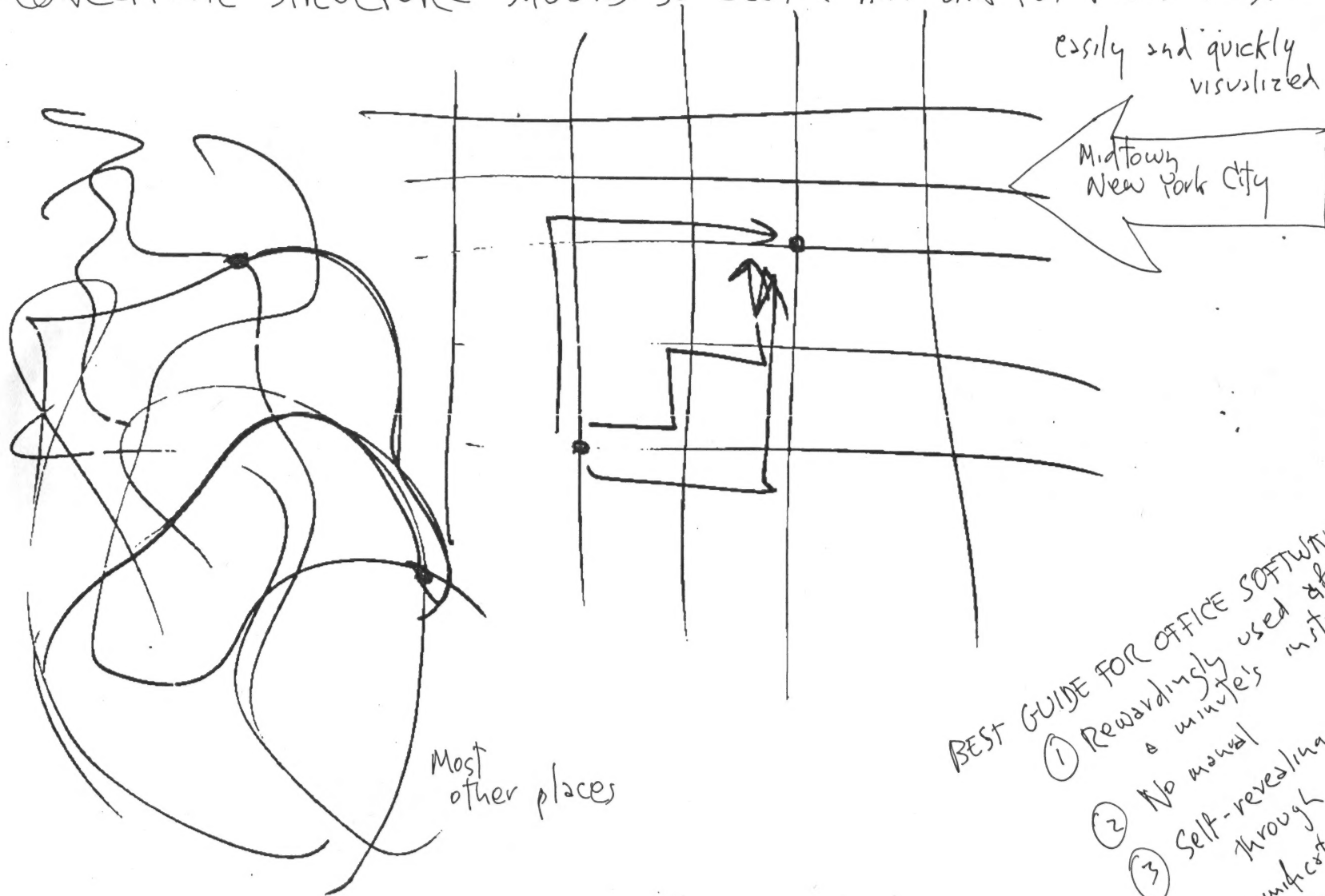MOVIE: Atmosphere, color, suspense, music

FUNCTIONALITY

~~User-friendly~~   ~~metaphors~~

\* "self-revealing"
(Klaus Landberg) —
details, learned gradually,
fit in with first impression.

easily and quickly
visualized and imagined.

Midtown
New York City

Most
other places

BEST GUIDE FOR OFFICE SOFTWARE: Pac-Man.

① Rewardingly used after
a minute's instruction

② No manual

③ Self-revealing (or explanation)
through exploration

④ Ramifications are discovered,
fit in with earlier
understanding.

FEEL: ⑤ Colorful, good sound
very quick response.